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09/996,938	11/30/2001	Masahiko Takeuchi	1752-0153P	4014

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EXAMINER

HAMILTON, CYNTHIA

ART UNIT PAPER NUMBER

1752

DATE MAILED: 12/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/996,938

Applicant(s)

TAKEUCHI ET AL.

Examiner

Cynthia Hamilton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 8/27/03 and 9/22/03.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) 4 and 5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-6 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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### DETAILED ACTION

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-3 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite

for failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention. Component (B) is "at least one acrylate selected from (meth)acrylates

or oligomers thereof, wherein said at least one acrylate is modified with ethylene oxide or

propylene oxide and wherein said at least one acrylate is selected from the group consisting of :".

The language leaves unclear whether the "at least one acrylate" is the modified compound with the modification obtained with ethylene oxide or propylene oxide or the "at least one acrylate" is the acrylate before modification. Butyl (meth)acrylate is clearly not ethylene oxide or propylene oxide modified. It is a member of the "at least one acrylate". Is B the modified product of the "at least one acrylate" or is it the "at least one acrylate"? Are two acrylates being described here and as such should they be clearly separated by different words? Is (B) the product of the "at least one acrylate" that has been modified with ethylene oxide or propylene oxide? Is the modified product made from one of the listed compounds, i.e. modified, or does the modified product just have parts of the "at least one acrylate" in the list such as trimethylolpropane triacrylate is a member of the list in claim 1 for "at least one acrylate" but is cited by applicants in their arguments to the acrylate that is to be modified to ethylene oxide modified

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trimethylolpropane triacrylate. Applicants on page 2 refer to ethylene oxide modified trimethylolpropane triacrylate from JP 10-161306A. Applicants do not say how trimethylolpropane triacrylate was "modified" to yield the compound in question. Is the compound made from modifying trimethylolpropane triacrylate or does the compound only have three acrylates and a trimethylolpropane group present? Starting on the bottom of page 7, applicants disclose "an explanation" of (B) which lists a series of (meth)acrylates then on page 10 discloses these compounds are used as raw material for the (B). (B) "can be obtained by treating any of the aforementioned (meth)acrylates or oligomers thereof with an alkylene oxide. This is "can" does not limit (B). The examiner is unclear if a compound like tetrabromobisphenol A diethoxy diacrylate compound count as an "alkylene oxide-modified product of at least one acrylate selected from (meth)acrylates or oligomers thereof" because of the presence of diethoxy groups? Such a compound is "modified" but is not obtained by reacting an acrylate with an alkylene oxide. However, there is a modification from a tetrabromobisphenol A diacrylate compound. Thus, the terminology used by applicants is too vague to allow the examiner to determine if such compounds as ethylene glycol di (meth) acrylate that has the same structure if made from ethylene oxide or ethylene glycol. The structure is the same. Grant et al defines alkylene oxide under "alkylene" as "a. oxides" as (1) alcohol ethers. The aliphatic compounds that contain both the primary alcohol and the ether groups; as diethylene. (2) Epohydrins. Alicyclic compounds which are the ethers of glycols; as, ethylene oxide." The specification does not make clear what is encompassed by "modified", the claims 1-3 and 6 do not make clear what is (B), i.e. is it the modification only or the acrylate before modification or a product of the acrylate after modification with the ethylene or propylene oxide or is it some

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product that has parts of the structure set forth by a member of the list of compounds set forth that has nothing to do with how the modified product is made only related in that parts of it are present in the "modified" product? The limits of (B) in claims 1-3 and 6 are thus still indefinite for this reason.

4. Applicant's arguments filed August 27, 2003 have been fully considered but they are not persuasive. Applicants argue their amendment has clarified the wording of claims 1-3 and newly added claim 6 with respect to what is encompassed by (B). Applicants argue that it is now clear that (B) must include an ethylene oxide or a propylene oxide moiety. The examiner is not so sure this is clear as she has set forth above in the rejection under 35 USC 112, second paragraph. Applicants have not made clear what the "modification" encompasses. Applicants have not made clear that (B) is only the modified compound and not the compound before modification since applicants require the "at least one acrylate to be so modified then list a hose of "said at least acrylate" compounds that do not have an ethylene oxide or propylene oxide moiety. Applicants have not clearly set forth that the list of "at least acrylates" is not a list of (B) but is a list of the compounds before "modification". Applicants have not claimed (B) as a product by process either. There is no indication that the list of compounds in claim 1 are reacted to form the "modified" products. Thus, applicants have not clarified the meaning of (B) and the rejection is made on the now amended claims. Applicants have used the wording "ethylene oxide-modified trimethylolpropane triacrylate" then cited JP 10-161306A and a formula there as "recites the chemical formula of an ethylene oxide-modified trimethylolpropane triacrylate". There is no certified translation of the JP document to support this allegation. Applicants cite Trade literature to Aronix to support their wording, but the examiner did not find the "modified"

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language in the trade literature cited. What is modified is the trimethylolpropane that then has been again modified with acryl compounds to obtain the compounds in question. There is no showing by applicants that triacrylate trimethylolpropane was modified with ethylene oxide to form the compounds of Aronix or the JP document. Thus, applicants have failed to clarify the limits set forth in instant claims 1-3 and 6 to the point a worker of ordinary skill in the art would understand the limits of (B) in the instant claims.

5. Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Kushi et al (4,970,135). Example 1 of Kushi et al appears to anticipate the instant invention wherein instant (A) is the reaction product of bisphenol A diglycidyl ether/acrylic acid /maleic anhydride which appears to be made in the same manner as (A) with C being  $-\text{C}(\text{CH}_3)_2-$  and (B) is tetrabromobisphenol A diethoxy diacrylate and (E) is neopentyl glycol diacrylate. These components are present in the amounts that fall within the ranges claimed by applicants. The diethoxy diacrylate is a modified polyethylened glycol mono(meth) acrylate or a modified hydroxyethyl (meth) acrylate or modified from butyl (meth)acrylate by transesterification and removal of the butyl group. Because of the confusion over the limits of (B) in the instant claims the examiner cannot determine that the compositions of Kushi et al are excluded by the instant compositions.

6. Applicant's arguments filed August 27, 2003 and September 22, 2003 have been fully considered but they are not persuasive. Applicants appear to believe that by deleting "tetrabromobisphenol A di (meth) acrylate" from the list of acrylates in claim 1 that Kushi et al no longer applies to the instant compositions. The examiner has modified her rejection in

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response to the amendments by applicants to show how other compounds in the list now could be “modified” to yield the (B) set forth by applicants.

7. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al (5,721,076) as evidenced by Grant et al. The compositions of Watanabe et al teach all the instant composition with the exception of using instant component (B) alkylene oxide-modified product of at least one acrylate selected from (meth) acrylates or oligomers thereof. However, in col. 10, lines 45-65 of Watanabe et al, the optional use of polymerizable monomers and oligomers to act as a viscosity modifier is taught of which ethylene glycol di(meth)acrylate, diethylene glycol di(meth)acrylate, triethylene glycol di(meth)acrylate, tetraethylene glycol di(meth)acrylate, and tetramethylene glycol di(meth) acrylate are listed as choices among less than 20 choices. These monomers all have an alkylene oxide present as defined by Grant et al and thus are (meth) acrylates so modified. With respect to instant claims 1-3, the use of any of these monomers for the reason of adjusting viscosity as taught by Watanabe et al would have been prima facie obvious. In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed.Cir. 1990). The ranges set forth by Watanabe et al for their components overlap those of the instant compositions. In Watanabe et al, see particularly the Abstract, and col. 3-8.

8. Applicant's arguments filed August 27, 2003 have been fully considered but they are not persuasive. Applicants argue the compounds of Watanabe are not the same compounds as would be obtained by modification with an alkylene oxide. The examiner has already addressed this argument and says they are the same. Applicants set forth a structure for their compounds that is

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not part of the claimed invention thus it is not relevant to the rejection. Again, the examiner believes this disagreement arises from the lack of clarity around the nature of (B) set forth.

Applicants also point to comparisons with wherein there is no use of the compounds cited by the examiner that makes Watanabe relevant to the rejection at hand. The rejection stands.

9. Claims 1-3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al (5,721,076) in view of Cohen (3,380,831). The compositions of Watanabe et al teach all the instant composition with the exception of using instant component (B) alkylene oxide-modified product of at least one acrylate selected from (meth) acrylates or oligomers thereof. However, in col. 10, lines 45-65 of Watanabe et al, the optional use of polymerizable monomers and oligomers to act as a viscosity modifier. One such monomer given for this is trimethylolpropane tri (meth) acrylate. Cohen (3,380,831) teaches that the use of the polyoxyethyltrimethanolpropane triacrylates over the trimethanolpropane triacrylates avoids some problem with toxicity in col. 1 and 2. Thus, with respect to instant claims 1-3 and 6, the exchange of the polyoxyethyltrimethanolpropane triacrylates and methacrylates for the trimethylolpropane tri (meth) acrylate to reduce toxicity problems would have been prima facie obvious.

10. Applicant's arguments filed August 27, 2003 have been fully considered but they are not persuasive. Applicants argue that because Cohen does not teach viscosity modification but instead reduction in toxicity then Cohen is not relevant to Watanabe. The examiner disagrees on the basis that toxicity is always an issue with any chemical composition for economic and safety reasons. The choice of a less toxic alternative to modify the Watanabe composition for



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viscosity reasons is sufficient reason to consider Cohen and use his compounds. The rejection stands.

11. The amendment filed August 27, 2003 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

- a. Applicants amended the paragraph beginning on page 7 and ending on page 8, The originally filed paragraph is:

“Next, an explanation will be given of (B) alkylene oxide-modified product of at least one kind of (meth) acrylate selected from (meth) acrylates or oligomers thereof or the component (B). There are instances where the component (B) is alkylene oxide-modified (meth) acrylate, alkylene oxide- modified (meth) acrylate oligomers or a mixture of the two.”

The examiner did not object to this paragraph in any manner.

Applicants amended this paragraph to read as follows:

“Next, an explanation will be given of component (B). Component (B) is at least one kind of (meth) acrylate selected from (meth) acrylates or oligomers thereof. Also, the component (B) includes compounds wherein said (meth) acrylate, or (meth) acrylate oligomers or a mixture of the two is modified with alkylene oxide.”

There is no explanation for the changing of definition of (B) by this amendment. (B) was the alkylene oxide-modified product of at least one kind of (meth) acrylate then (B) after amendment was “at least one kind of (meth) acrylate with no limitation to alkylene oxide modification.

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- b. Applicants then change the first full paragraph of page 8 of the original specification:

The original paragraph is:

“(Meth)acrylates (meaning acrylates and/or methacrylates) to be used as raw material for alkylene oxide-modified products (B) includes the following compounds.”

The amended paragraph is:

“(Meth)acrylates (B) includes the following compounds.”

There is no explanation for the change in scope for (B) by applicants.

- c. Applicants change the third originally disclosed full paragraph on page 10 from:

“The component (B) or alkylene oxide-modified product can be obtained by treating any of the aforementioned (meth) acrylates or oligomers thereof with an alkylene oxide. A typical alkylene oxide is ethylene oxide and propylene oxide.”

To:

“The component (B) includes compounds obtained by treating any of the aforementioned (meth) acrylates or oligomers thereof with an alkylene oxide. A typical alkylene oxide is ethylene oxide and propylene oxide.”

Applicants do not explain the change in scope with respect to (B) at this point.

Thus applicants made changes in scope to the original specification without explaining where support for the changes lay. The examiner did not object to the wording that was changed in these paragraphs. Applicants made the changes on their own initiative.

Applicant is required to cancel the new matter in the reply to this Office Action.

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12. Claims 4-5 are withdrawn from further consideration pursuant to 37 CFR 1.142(B), as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Applicant timely traversed the restriction (election) requirement in Paper No. 4.

13. Applicant's election with traverse of Group I, claims 1-3 and newly added claim 6, in Paper No. 4, filed August 27, 2003, is acknowledged. The traversal is on the ground(s) that (1) there is no serious burden on the examiner to search one extra subclass and (2) with respect to claim 5, the curing of the composition of claim 1 for any purpose is encompassed by claim 5 thus the formation of liquid crystal or other cured forms would be encompassed by claim 5 thus giving no other use for the intermediate but curing.

This is not found persuasive because of the following:

With respect to undue burden, the search for the cured product is not just for one subclass. The one subclass listed is only the mandatory original classification of the cured product. It is not the entire number of subclasses required searched for the cured product. If the cured product were imaged then a search in class 430/18 and 430/311 would be appropriate. The search for the elected group required consideration of 430/285.1, 430/280.1, 522/101, 526/247, 526/284, and 526/279. Three separate classes and six subclasses were considered for the composition uncured. That group encompasses 2235 patent documents in the US files alone. Class 428, subclass 209 encompasses 5031 patent documents of which only one crosses with the 2235 documents already considered. Thus, there is substantial burden placed on the examiner by consideration of just one more subclass.

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With respect to curing and claim 5, the examiner agrees with applicants' arguments with respect to the other use she gave for the intermediate. A second use not included in curing is the formation of further intermediates through reaction sites on the (A) compound at the COOH sites to form urethanes which will be further reacted with the (B) compounds to form polyurethanes for use as binders in printing plates. Thus, the restriction requirement is still held valid with respect to claim 5 as well as to claim 4.

The requirement is still deemed proper and is therefore made FINAL.

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

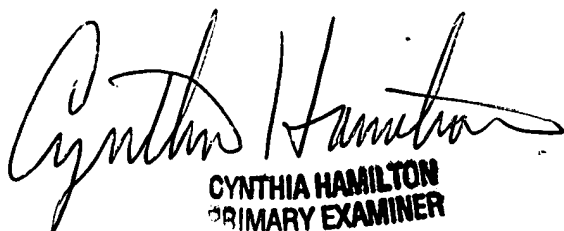
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Hamilton whose telephone number is (703) 308-3626. The examiner can normally be reached on Monday-Friday, 9:30 am to 5:00 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 703-308-2464. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305 0661.



**CYNTHIA HAMILTON**  
**PRIMARY EXAMINER**

Cynthia Hamilton  
Primary Examiner  
Art Unit 1752

December 1, 2003